Kansas Agricultural Experiment Station Research Reports

Volume 0
Issue 1 *Cattleman's Day (1993-2014)*

Article 1072

1984

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Abstract

Since the fall of 1976, 370 calves and 330 yearlings have been fed through the Southeast Kansas Steer Futurities. In four of the last seven years, both age categories have shown profits through the feedlot phase, using incoming market values assigned by professional market managers, actual feedlot performance and expenses, and slaughter value based on grade and yield date. Calves have been more profitable than yearlings in each of the seven years.

Keywords

Cattlemen's Day, 1984; Kansas Agricultural Experiment Station contribution; no. 84-300-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 448; Beef; Steer; Performance; Profit

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Performance and Profitability of Calves and Yearlings in Southeast Kansas Steer Futurities (Seven Year Summary)[1]

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Summary

Since the fall of 1976, 370 calves and 330 yearlings have been fed through the Southeast Kansas Steer Futurities. In four of the last seven years, both age categories have shown profits through the feedlot phase, using incoming market values assigned by professional market managers, actual feedlot performance and expenses, and slaughter value based on grade and yield data. Calves have been more profitable than yearlings in each of the seven years.

Yearlings averaged 123 pounds heavier and about 155 days older than calves at feedlot delivery time. The yearlings required 42 fewer days on feed, and gained .27 pounds per day faster through the feeding period with 8 percent more grading USDA Choice than calves. On the other hand, calves required 1.2 pounds less feed per pound of gain, were ready for market nearer the seasonal high prices and netted $29 per head more than yearlings. When the cost of ownership for an additional 155 days and cost of gain for an extra 123 pounds of weight is considered with the yearling cattle prior to the feedlot phase, calves become even more profitable. Larger framed cattle were more profitable within both calf and yearling divisions.

Introduction

Calving cows in the fall and growing cattle on summer pasture are common practices in Southeast Kansas. Thus, the steer futurity program in that area was expanded to include a division for yearling cattle, in addition to the spring-born calf feeding program practiced in other Kansas futurities.

Procedure

Producers enrolled in the Southeast Kansas Steer Futurity (Expo) delivered groups of five head of yearlings or weaned calves to a commercial feedlot in November of each year. Each group of five normally was sired by the same sire or breed of sire, and cattle within a group were in the same age category. An experienced cattle buyer or livestock auction manager placed an initial value on the cattle, based on current market price levels and cattle condition. Cattle were

[1]Appreciation is expressed to the Kansas Livestock Association for cosponsorship of the futurities, to Flint Hills Beef Feeders, Potwin, Circle E Feedlot, Potwin and Black Jack Cattle Co., Yates Center for feeding and management of the cattle, to Tom Orwig, Extension Livestock Specialist, South Central Kansas and area County Extension Agriculture Agents for assistance in organizing and collecting live and carcass data.

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processed using routine feedlot procedures. Extension personnel group weighed each consignment group for an official starting weight. Cattle were fed to slaughter on the feedlot's normal rations. When the lot management felt the cattle were of acceptable weight and fat thickness, they were sold to a packer on a grade and weight basis, and carcass traits measured. Feed, medical, yardage, and interest costs were recorded for each five-head group. A summary of growth rate, profitability, and carcass traits was provided to cooperating producers.

For this report, breeds and their crosses were combined using the Meat Animal Research Center classifications for mature frame size and growth rate. Cattle with 75 percent or more of any one breed were considered to be purebred. Hereford, Angus, Shorthorn, and all crosses between those breeds were classified as British. Purebred Limousin, South Devon, Tarentaise and Pinzgauer were classified as Smaller Continentals (SC). Purebred Gelbvieh and Brown Swiss were classified as medium Continentals (MC). Charolais, Marchigiana, Chianina, Simmental, Maine Anjou, and crosses among these breeds (Simmental x Charolais, for instance) were classified as Larger Continentals (LC).

All crossbred cattle containing any Brahman blood were grouped together for this report, including combinations of Brangus, Beefmaster, and Santa Gertrudis sires with British, Simmental, and crossbred cows. Two pens of MC x British calves were combined with the SC x British calves because frame sizes and average daily gains were similar. There were no MC X British yearlings.

Results

Since the first test began in the fall of 1976, 370 calves and 330 yearlings have been fed through the Southeast Kansas program. Using prices assigned at feedlot delivery time, actual feed, medicine, yardage and interest expenses, and actual grade and yield selling prices, feeding both yearlings and calves has been profitable in four of the last seven years. However, in every year, feeding calves has been a more profitable alternative than feeding yearlings (Table 32.1).

The price per hundredweight at delivery time has ranged from a low in 1977 around the mid $30's to a 1980 high of nearly $85 for calves and $75 for yearlings. The price spread between calves and yearlings has averaged $2 per cwt., except in 1980.

Calves averaged 123 pounds lighter than yearlings at delivery time. In recent years, weights have been heavier for both age categories than in earlier years. Average age of calves at delivery time was 235 days, while average age of yearlings was 390 days. Ownership and maintenance costs for an additional 155 days and cost of gain for an additional 123 pounds would need to be added to the lifetime cost of producing yearling cattle to slaughter, as compared to feeding calves to slaughter.

Eight percent more yearling cattle than calves graded USDA Choice. Part of this difference can be explained by the fact that yearling cattle averaged 17.6 months of age at slaughter while calves averaged 13.9 months. Even with a higher percentage grading Choice, average selling price for yearlings was $2.64 per hundredweight less. Actual selling prices were used, so any premium for USDA

Choice cattle over USDA Good cattle was reflected in the selling price. Part of this difference can be explained by seasonal price trends. Slaughter prices show a strong tendency to set yearly highs in May or June. Average time on feed from mid-November delivery for yearlings was 140 days, this placing slaughter time in late March or early April — before seasonal price peaks were reached. Average time on feed for calves was 182 days, placing their slaughter time in mid-May near the normal price peak.

Slaughter weights and carcass characteristics might have been influenced by the subjective visual assessment used to determine when cattle were ready for market. Yearling cattle were 52 pounds heavier at slaughter and 33 pounds heavier on the rail. Dressing percent, yield grade, and fat thickness over the ribeye were nearly the same for both age categories. Yearlings had .4 square inch larger ribeyes, while the younger cattle were 1.6 inches taller at the hip at 12 months of age (1 unit differences in frame score equals 2 inches).

Average daily gain of yearling cattle was .27 pounds per day faster than calves. However, calves required 1.2 pounds less feed per pound of gain. Heavier starting weight and greater weight to maintain through the feeding period were factors in the poorer feed conversion of yearlings. Likewise, a 42-day shorter yearling feeding period was a factor in their higher average daily gain, because growth of cattle tends to slow as they fatten. Average medical costs were similar for the two age categories.

Table 32.2 shows the performance of various breed groups combined according to the MARC classification for frame size and growth rate.

Many of the relationships between calves and yearlings discussed earlier held true when cattle were divided by size based on breeding. Calves were approximately 2 inches taller at one year of age, were valued higher per cwt., and required less feed per pound of gain than yearlings within each breed group designation. Yearlings weighed more at delivery time, required fewer days on feed to slaughter, and gained more per day than calves. British, Smaller frame Continental, and Brahman-cross yearlings graded a higher percentage Choice than calves. This trend did not exist with the Larger framed Continental cattle.

For breed categories other than the Smaller Continentals x British, calves were more profitable than yearlings. When Brahman cattle are excluded, average daily gain of yearling cattle appears to be more consistent regardless of frame designation than calves.

Larger framed yearlings returned $8.23 more per head through the feeding period than British yearlings. Larger framed calves were valued $20-50 more at the start of the feeding period, they grew faster, yielded trimmer carcasses, and netted about $20 more profit per head than British calves.

Table 32.1. Annual Comparisons - Southeast Kansas Steer Futurities

Year	Price/Cwt at Feedlot Delivery		Feedlot Delivery Weight		Feeding Period Profit	
	Calves	Yearlings	Calves	Yearlings	Calves	Yearling
1977	$35.67	$33.59	512	663	-10.86	$-31.78
1978	40.52	38.35	504	681	129.69	34.39
1979	67.02	65.41	549	607	104.62	89.89
1980	84.87	74.73	518	667	-84.71	-44.82
1981	72.97	70.90	570	645	-59.97	-61.87
1982	62.56	61.29	580	701	125.71	64.25
1983	63.86	61.00	594	729	66.56	19.29

Year	Selling Price/cwt.		Percent USDA Choice		Final Live Weight	
	Calves	Yearlings	Calves	Yearlings	Calves	Yearlings
1977	$37.93	36.02	59.4	64.6	951	1053
1978	53.48	45.65	47.4	50.7	1031	1030
1979	67.30	65.53	63.0	57.8	1013	1046
1980	63.85	64.88	41.6	55.7	957	1058
1981	63.68	62.78	38.5	77.1	991	1057
1982	71.08	66.80	33.2	34.3	1088	1073
1983	68.40	65.56	52.0	50.2	1034	1113

*Interest costs on delivery value included.

Table 32.2. Group Breed Comparisons—Southeast Kansas Steer Futurities

Item	British	Smaller Continentals x British	Larger Continentals x British	Large Continentals	All Brahman Crosses
	Calves				
Number of cattle	80	35	105	65	60
Frame size	3.6	4.7	5.3	5.4	4.4
Delivery weight	499	575	575	607	533
Delivery price/cwt	$63.77	61.52	60.65	61.13	61.86
Delivery value	$318.21	353.74	348.75	371.06	329.71
Final weight	926	1009	1056	1117	1005
Final price/cwt	$61.11	60.17	60.85	61.12	61.09
Carcass weight	579	639	659	691	626
Dressing percent	62.4	63.3	62.3	61.8	62.2
Days fed	177	179	174	179	183
Feed/lb, gain	9.2	10.3	9.5	9.6	9.1
Avg. daily gain	2.42	2.42	2.79	2.85	2.59
Percent Choice	59	22	60.4	47.3	50.3
Ribeye area	10.5	12.7	12.3	12.4	11.5
Fat thickness	.45	.33	.32	.27	.41
Yield grade	2.47	2.25	2.09	2.08	2.41
Medical Expense	$7.85	21.59	3.39	7.07	5.80
Feeding period profit	$53.73	19.65	72.63	76.44	71.79
	Yearlings				
Number of cattle	80	30	85	55	35
Frame size	2.6	3.8	4.2	4.8	3.8
Delivery weight	634	686	704	736	701
Delivery price/cwt	$59.13	58.62	56.91	56.95	57.74
Delivery value	$374.88	402.13	400.65	419.15	404.76
Final weight	1006	1032	1083	1170	1026
Final price/cwt	$57.59	58.41	58.10	58.47	59.02
Carcass weight	623	648	676	723	638
Dressing percent	61.9	62.8	62.4	61.8	62.1
Days fed	132	127	136	145	128
Feed/lb. gain	10.1	11.1	10.8	10.8	11.3
Avg. daily gain	2.81	2.75	2.79	3.00	2.56
Percent Choice	77	48	57.6	43.9	60.4
Ribeye area	11.6	12.8	12.3	12.8	11.3
Fat thickness	.45	.30	.32	.28	.38
Yield grade	2.54	2.42	2.11	1.99	2.39
Medical Expense	$5.73	3.89	3.62	2.92	5.01
Feeding period profit	26.49	26.83	32.33	34.72	25.41